CASE STUDY. GEN3SYS®

PROJECT PROFILE: **Grey Cast Iron Aerospace**

The end-user is manufacturing base plates for turret presses made from grey cast iron, 183-234 Bhn, using a Haas EC 400 machining center, with 300 PSI through spindle coolant.

EXTENDED TOOL LIFE

+ CHALLENGE:

Previously the customer was using a Seco Crownloc exchangeable tipped drill, running at the following parameters: 1,150 RPM, 0.010 IPR, (0,25 mm/rev) which resulted in 11.5 IPM (292,1 mm/min). The tool drilled a 0.551" (14 mm) diameter hole to a thickness of 2 inches. The tool had a cycle time of 15.4 seconds and a tool life of 250 minutes, producing 974 holes. Looking for improvements in tool life, the customer asked if Allied could provide a better tool.

+ OUR SOLUTION:

Allied recommended GEN3SYS® using insert item 5C214H-14-CI and holder 60514H-075F. The tooling ran at a speed of 2,080 RPM, 0.012 IPR (0,30 mm/rev) which resulted in 25 IPM (635,0 mm/min). GEN3SYS® had a cycle time of 9.8 seconds and a tool life of 300 minutes, producing 1837 holes.
Five seconds of machining time was added into both competing tools to account for the positioning of the work piece for drilling.

+ PROJECT DATA:

The GEN3SYS® with Cast Iron geometry met the customer's goals of increased tool life, while providing over 2X the penetration rate. The tool life was increased by 88%, while the cost per hole fell from $0.70 to $0.44, for a cost savings of over 37%. More impressively, the time saved in the actual drilling process was 61%! Allied saved the end-user money, and maintained a consistent hole size compared to the Seco Crownloc drill.